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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/015,712

12/17/2001

Stephen H. Hall

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EXAMINER

CHO, JAMES HYONCHOL

ART UNIT

PAPER NUMBER

2819

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/015,712

Applicant(s)

HALL, STEPHEN H.

Examiner

James H. Cho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --Transmission Mode Signaling with a Slot Functioning as a Main Bus Trunk--.

Claim Objections

3. Claims 1 and 15 are objected to because of the following informalities:
"Apparatus" on line 1 of claims 1 and 15 appears to be --An apparatus-- respectively.
Appropriate correction is required.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the slot being terminated as recited in claims 2 and 16 and the transmission line being terminated as

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recited in claims 3 and 17 must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2-3 and 16-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of the slot being terminated as recited in claims 2 and 16 and the transmission line being terminated as recited in claims 16 and 17 is neither described nor discussed in the specification while on page 5 of the specification the impedance of the slot is described as being a function of the slot width and the distance to other planes. Determining the impedance of the slot is far different from the fact that the slot is terminated and is not relevant for those skilled in the art.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4-8, 15 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phelan (US PAT No. 3,771,075) in view of Khorrami et al. (US PAT No. 5,970,393).

Regarding claims 1 and 15, Figs. 1-3 of Phelan teaches an apparatus (microstrip transmission lines) comprising a substrate (12), a ground plane (13) on the substrate, the ground plane having a slot (14), parallel arranged transmission lines (15s are parallel) lying over the slot where the microstrip transmission lines are used as a modular feed network for a phased array antenna, but does not disclose data processing agents each connected to one of the transmission lines.

However, Fig. 2 of Khorrami et al. discloses a smart structure communication systems comprising plurality of data processing agents (CONTROLLERS) having inputs and output coupled to the microstrip antenna array for the purpose of providing advanced electronic beam steering, digital control and adaptive processing (col. 3, lines 11-50)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide microstrip transmission lines of Phelan with

data processing agents of Khorrami et al. because it would provides input signals and output signals for the microstrip transmission lines.

Regarding claims 4 and 18, Phelan in view of Khorrami et al. teaches the apparatus of claims 1 and 15 in which the slot functions as a main bus trunk when excited (slot provides path for signals; col. 3, lines 3-26).

Regarding claims 5 and 19, Phelan in view of Khorrami et al. teaches the apparatus of claims 1 and 15 in which the data processing agents comprise processors (CONTROLLERS process inputs and outputs data).

Regarding claims 6 and 20, Phelan in view of Khorrami et al. teaches the apparatus of claims 1 and 15 where the data processing agents comprise chipsets (chipsets in CONTROLLERS are inherent).

Regarding claim 7, Phelan in view of Khorrami et al. teaches the apparatus of claim 1 in which the transmission lines lie perpendicular to the slot (14 and 15 in Fig. 1 of Phelan are perpendicular each other).

Regarding claims 8 and 21, Phelan in view of Khorrami et al. teaches the apparatus of claims 1 and 15 where the data processing agents comprise signaling circuitry (signaling circuitry in CONTROLLERS are inherent).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Phelan (US PAT No. 3,771,075).

Regarding claim 10, Figs. 1-3 of Phelan teaches a method comprising in a bus (transmission line strips 15), sourcing a current being representative of binary data on to a first line (15 is provided with signals; the signals being binary data is intended use), inducing a return current on a reference plane (ground plane 13; col. 3, lines 3-26) and transferring energy of the return current to a slot in the reference plane (Fig. 3 show signals is propagated along the microstrip lines in a transverse electromagnetic mode).

Regarding claim 12, Figs. 1-3 of Phelan teaches the method of claim 10 in which sourcing is generated by a driving agent (driver for the signal on 15 is inherent).

8. Claims 9, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phelan (US PAT No. 3,771,075) in view of Williams (US PAT No. 6,133,795).

Regarding claims 9, 11 and 14, Figs. 1-3 of Phelan teaches the method of claim 10 and a method comprising inducing a transient return current on a reference plane in

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response to a driving agent sourcing a current onto a first transmission line (Fig. 3 show signals is propagated along the microstrip lines in a transverse electromagnetic mode; col. 3 , lines 3-26), the current being representative of binary data (15 is provided with signals; the signals being binary data is intended use), propagating energy of the transient current to a slot in the reference plane (ground plane 13; col. 3, lines 3-26), inducing a transient voltage pulse onto a second transmission line (the other 15) connected to a receiving agent when the propagating energy encounters the second transmission line, but does not disclose a step of generating a binary digital signal in the receiving agent from the transient voltage pulse received on the second transmission line and the receiving agent is a processor. However, Fig. 2 of Williams teaches the step of generating binary digital signal in a receiving agent from the voltage pulse (signal output of microstrip line 55 is converted to a digital signal by the IF amplifier 56 and ADC 58; col. 5, lines 10-29) for the purpose of processing the signal by the signal processing unit 60.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide microstrip transmission lines of Phelan with the receiving agent of Williams because it would provides input signals in binary digital signal format for the further processing by the signal processing unit.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phelan (US PAT No. 3,771,075) in view of Khorrami et al. (US PAT No. 5,970,393).

Regarding claim 13, Figs. 1-3 of Phelan teaches the method of claim 12 as discussed above, but does not disclose the driving agent is a processor.

However, Fig. 2 of Khorrami et al. discloses a smart structure communication systems comprising plurality of data processing agents (CONTROLLERS) having inputs and output coupled to the microstrip antenna array for the purpose of providing advanced electronic beam steering, digital control and adaptive processing (col. 3, lines 11-50)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide microstrip transmission lines of Phelan with data processing agents of Khorrami et al. where the driving agent is a processor because it would provide input signals and output signals for the microstrip transmission lines.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Heine (US PAT No. 4,613,834) discloses microwave slot line ring hybrid having arms which are HF coupled to the slot line ring.

Chiron et al. (US PAT No. 4,027,253) discloses a non-reciprocal broadband slot line device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Cho whose telephone number is 703-306-5442. The examiner can normally be reached on Monday-Friday, 05:30am-02:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 703-305-3493. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0142 for regular communications and 703-308-0142 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in cursive script that reads "James Cho".

James Cho
April 16, 2003